

Attachment 1

APPENDIX A

STATEMENT OF WORK

“Environment, Health and Safety – Laser Safety and Related EHS Support Services”

March 5, 2010

1.0 BACKGROUND

The National Renewable Energy Laboratory (NREL) is continuing to experience unprecedented growth. The Environment, Health and Safety (EHS) Office has increased staffing resources in an attempt to keep pace with this growth. Even with this increase in staff the EHS Office continues to have a need for additional technical support. Such support includes providing laser safety consultation, performing industrial hygiene surveys/reporting, completing EHS inspections and incident investigations, as well as providing EHS training.

2.0 OBJECTIVE

Provide support to the EHS office by completing projects, tasks and supporting program management.

3.0 SCOPE OF WORK

The Subcontractor shall perform as a subject matter expert on Laser Safety by developing, implementing, and administering NREL's Laser Safety Program, as specifically directed by the NREL Technical Monitor (NREL's Laser Safety Officer).

4.0 TASKS

The Subcontractor shall perform the following tasks:

- 4.1** The Subcontractor shall perform as a subject matter expert for Laser Safety, which includes the following:
 - 4.1.1** Perform and document laser hazard evaluations, particularly for open beam lasers (completing laser safety assessments)
 - 4.1.2** Work with researchers to recognize, analyze, develop and document laser safety control measures – particularly for open beam lasers
 - 4.1.3** Determine and document personal protective equipment requirements (calculating MPEs, optical density requirements, nominal hazard zones and skin protection)
 - 4.1.4** Assist in the preparation of laser Safe Operating Procedures, complete annual review of these safe operating procedures
 - 4.1.5** Conduct and document periodic inspections/audits of laser labs. Track corrective actions to closure.
 - 4.1.6** Assist EHS Points of Contacts with laser safety assessments and readiness reviews
 - 4.1.7** Attend the Department of Energy (DOE)-Sponsored Laser Safety Officer Workshop in July 2010, Berkeley, CA.

4.2 The Subcontractor shall perform other service-oriented EHS functions, including the following:

- 4.2.1 Present EHS Training, including New Employee Orientation. The Subcontractor shall develop and provide EHS training to various organizational units, through concurrence with the Technical Monitor.
- 4.2.2 Respond to staff inquiries and requests for assistance on EHS matters.
- 4.2.4 Review other, non-laser, safe operating procedures as needed
- 4.2.5 Develop, implement, analyze and document work place exposure monitoring plans.
- 4.2.6 Develop plans for EHS inspections, audits, and oversight assessments.
- 4.2.7 Conduct and document EHS inspections, audits, and oversight assessments.
- 4.2.8 Assist with accident/incident investigation and root cause analysis, as needed.
- 4.2.9 Apply advanced EHS technical skills to tasks within areas of expertise such as industrial hygiene and occupational safety.
- 4.2.10 Perform special project technical work; individually, and as a team member or team leader – within Subcontractor's area of expertise

5.0 REVIEW MEETINGS

The Subcontractor shall attend monthly review meetings with the Technical Monitor to discuss performance on the previous month's work and to plan the upcoming month's activities.

6.0 DELIVERABLES

- 6.1 **Monthly Summary Reports.** The Subcontractor shall prepare and submit a Monthly Summary of Work documenting all work performed under Section 4.0 Tasks, during the previous month. The Monthly Summary Report shall identify the dates which the work was performed, types of work conducted, and work locations (if applicable). The Monthly Summary Report shall be due on the 15th of each month.
- 6.2 Specific deliverables for this requirement will be requested by the Technical Monitor on as needed basis, as appropriate. The Subcontractor shall produce specific deliverables in response to the Technical Monitor's requests and needs. The products and schedules for these deliverables shall be communicated to the Subcontractor by the Technical Monitor.

7.0 ELECTRONIC REPORTING REQUIREMENTS FOR SUBCONTRACT REPORT DELIVERABLES

Electronic Reporting Requirements for Subcontract Report Deliverables: As set forth in Department of Energy Order 241.1A, NREL is required to submit in an electronic format all scientific and technical information, including subcontract report deliverables intended for public distribution, to the DOE Office of Scientific and Technical Information (OSTI). In addition, it is NREL's intention to post subcontract report deliverables containing publicly available information (e.g. non-confidential, non-protected, non-proprietary information) for distribution on the NREL Intranet or the Internet.

The Subcontractor shall provide the final approved version of report deliverables intended for public distribution in accordance with the electronic reporting requirements described below.

The Technical Monitor may specifically direct the Subcontractor to provide reports in one or more of the file format standards provided below. An exception to the format standards must receive prior approval from NREL Publication Services.

- a. The Subcontractor shall submit all report deliverables intended for public distribution (including status, annual, or final reports) as electronic files, preferably with all graphics and images embedded within the document. The electronic files shall be submitted along with an accompanying hard (printed) copy(ies) of the report.
- b. All final approved version submissions shall be delivered to NREL on PC or MAC-formatted media (CD-ROM or DVD-ROM). Files of 1 MB or less can be sent via e-mail to the 1) NREL Technical Monitor, 2) the NREL Subcontract Administrator or Associate (as specified in the Statement of Work).
- c. The accepted standard is the Microsoft Office suite of programs (version 2003 or higher for PC or Mac), and the preferred format is a single, editable, electronic file that includes all of the text, figures, illustrations, and high-resolution digital photographs (photographs should be scanned and incorporated in the text). Acceptable file formats are: Microsoft Word, Microsoft PowerPoint, Microsoft Excel, Microsoft Project, Microsoft Visio, and/or Microsoft Publisher.
- d. If it is not possible to include all of the graphics and images (figures, illustrations, and photographs) in the same file as the text, NREL will accept the text in one of the above formats and the graphics and images as separate electronic graphic or image files*. The accepted standard for page layout and graphics is the Adobe Creative Suite of programs. Native files must be submitted, and if a page layout application is used, the job should be packaged complete with fonts used and links to supporting graphics. The following software is supported on both Mac and PC platforms: Adobe InDesign, Adobe Photoshop, Adobe Illustrator, and/or Adobe FireWorks.

*The acceptable graphic or image file formats are: .eps, .tif, .gif, .jpg, .wmf, .emf, .pct, .png, .bmp, .psd, .ai, .fh, .qif, .fpx, .cdr. The preferred resolution for graphics or images is 300 dpi. Include all fonts used in creating the file.
- e. For animation, video, or multi-media elements (e.g. Flash animated graphics, video clips, HTML or Script-based interactivity through a browser, or CD-ROM), negotiations must be made with the Subcontract Administrator as to acceptable deliverable format prior to award.
- f. In the rare case that the graphics or images cannot be supplied in native formats, submit a high-resolution scan from a hard copy with a minimum of 300dpi for color/grayscale, or 600dpi for bw/lineart scans. Submit the scanned image in one of the acceptable image formats listed above.

- g. For all calculations in support of subcontract reports that are conducted in ASPEN+, an electronic copy of INPUT, REPORT and BACKUP (if Model Manager is used) must be submitted with all reports. Additionally, if costing or sizing calculations are conducted in a spreadsheet [no process calculations (heat and material balances) in spreadsheet format are permitted], a copy of the fully documented MS Excel file shall be supplied. Note that vendor quotes and other non-original material can be supplied in hard copy.
- h. A fully executed release shall be supplied to NREL with all photographs, regardless of whether such photographs are delivered to NREL electronically or in hard copy. Such release shall certify that the Alliance for Sustainable Energy, LLC, Management and Operating Contractor for the National Renewable Energy Laboratory and the United States Government is granted a non-exclusive, paid-up, irrevocable, worldwide license to publish such photographs in any medium or reproduce such photographs or allow others to do so for United States Government purposes.
- i. The Subcontractor may contact NREL Publication Services at (303) 275-3648 with questions regarding technical guidance concerning the submission of subcontract report deliverables as electronic files or exceptions to electronic files for graphics and images.

Deliverable Addresses:

The Subcontractor shall clearly label all deliverables to include the Subcontractor name, NREL subcontract number, NREL Technical Monitor name, date, and the deliverable description. Deliverables shall be sent to the following addresses:

National Renewable Energy Laboratory

Attn: * Technical Monitor**

1617 Cole Blvd.,
Golden, CO 80401
E-mail: ***@nrel.gov

One (1) master electronic version of monthly reports
One (1) master unbound printed copy of monthly reports

National Renewable Energy Laboratory

Attn: *, Subcontract Associate**

Contracts and Business Services
1617 Cole Blvd., MS
Golden, CO 80401
e-mail:

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NREL Publication Services

National Renewable Energy Laboratory
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